

FireFit Footnotes

Hydration & food supplements

By Michelle Ryerson

Maintaining good hydration and nutritional intake are crucial components to being "FireFit." According to several Ironman athletes with whom I have spoken, the No. 1 issue during competition is maintaining adequate nutrition and hydration. This is an issue for wildland firefighters as well, especially as we continue to see problems related to heat-related illnesses and lack of appropriate nutrition during the fire season.

Specifically, wildland firefighters' hydration demands depend in part on the environmental conditions (temperature and humidity) they face, as well as their energy expenditure. It is therefore critical that firefighters consume an appropriate amount of water and carbohydrate/electrolyte supplements to avoid heat-induced illnesses.

- Firefighters need 1 liter of fluid per 1 hour of work performed. It's recommended that sport drinks (e.g., Gatorade and Powerade) comprise one-third to one-half of fluid needs, with the balance supplied by water. Additional carbohydrates can be supplied by solid supplements, such as energy bars.
- Firefighters should avoid excessive caffeine, including caffeine-laden energy drinks. Caffeine not only contributes to dehydration, but also robs the body of essential nutrients.

During a long work shift, a firefighter can expend more than 4,000 calories. The depletion of nutrients is often a gradual process, resulting in the sudden onset of fatigue (aka, "hitting the wall").

- Firefighters should consume one-third to one-half of a high-carbohydrate energy bar or candy bar during each hour of hard work and one more bar immediately after work.
- While on assignment, it's essential that firefighters consume a balanced, nutritious diet consisting of approximately 60 percent carbohydrates, 25 percent fat and 15 percent protein.
- Firefighters should avoid "fad" diets or weight-loss schemes, especially during the fire season.
- Lastly, it is important that firefighters be cognizant of the health hazards associated with over-the-counter (OTC) performance-enhancers, as outlined in an National Wildfire Coordinating Group Safety Warning issued in 2001. These supplements are sold in stores under various names, and contain ephedrine or ephedra (*ma huang*), which have a similar effect on the body as amphetamines. The deaths of military personnel and professional sports players have been associated with these supplements. Firefighters taking any drugs or OTC supplements should consult a physician or pharmacist about possible side effects related to working in hot conditions.

For additional information on the above subjects, visit the NWCG Safety Alert System at <http://safenet.nifc.gov/notice.nsf>, and review the Safety Advisory Wildland Firefighter Health and Safety Report No. 8, 05/07/2004, and the Safety Warning Heat Intolerance from performance pills, 08/13/2001.

Visit www.nifc.gov/firefit/index.htm for more information.

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